

REMARKS

Claims 1, 3-10 and 12-20 remain in the present application.

Claims 1-21 are rejected. Claims 2 and 11 are cancelled. Although Claims 1 and 7 are amended herein, Applicants respectfully submit that no new matter has been added by the claim amendments. Applicants respectfully request further examination and reconsideration of the rejections based on the amendments and arguments set forth below.

Claim Rejections - 35 U.S.C. §103

The above referenced Office Action rejects Claims 1-20 as being unpatentable over U.S. Patent No. 5,663,900 to Bhandari et al. (hereafter referred to as "Bhandari") in view of U.S. Patent No. 6,161,199 to Szeto et al. (hereafter referred to as "Szeto"). Applicants respectfully traverse, and point out that independent Claims 1 and 7 have been amended to more particularly point out aspects of the present invention.

Applicants respectfully assert that Bhandari fails to suggest, teach, or describe the limitations "wherein the programming instructions are sent to the microcontroller residing in the socket using one of the data lines for clock and another of the data lines for the programming instructions" as recited in independent Claims 1 and 7. Embodiments of the claimed invention disclose a system and method for combining an in-circuit emulator and a programmer

(page 4, lines 24-28). More specifically, an emulator microcontroller with a pair of coupled data lines may be transitioned to a sleep state to enable the programmable microcontroller to receive programming instructions over one data line and a clock signal over another data line (line 24 of page 4 to line 20 of page 5).

In contrast, Bhandari teaches an electronic design automation system without the ability to program a microcontroller as claimed. Consequently, Bhandari fails to suggest, teach, or describe sending programming instructions over one data line and a clock signal over another data line to a device to programmed, as claimed. Moreover, by teaching that software and hardware as shown in Figures 1-4 provides emulation capabilities without provisions for a programmer or a mechanism to cause the system to enter a sleep state to enable such programming, Applicants respectfully assert that Bhandari effectively teaches away from the claimed embodiments as one skilled in the art would recognize that emulation hardware as taught by Bhandari would not be able to process programming instructions and a clock signal sent to data I/O pins.

Applicants respectfully assert that the combination of Bhandari and Szeto fails to suggest, teach, or describe the cited claim language because Szeto also fails to suggest, teach, or describe the limitations “wherein the

programming instructions are sent to the microcontroller residing in the socket using one of the data lines for clock and another of the data lines for the programming instructions” as recited in independent Claims 1 and 7. As discussed above, embodiments of the claimed invention disclose the combination of an emulator and a programmer, along with circuitry and mechanisms to enable both tasks to be executed using a single interface. In contrast, Szeto teaches an in-system debugging system capable of programming a microcontroller (abstract). However, Applicants respectfully assert that Szeto does not teach that this system is capable of carrying out emulation operations, as claimed. Accordingly, Szeto also fails to suggest, teach, or describe that programming instructions and a clock signal can be sent over data lines otherwise used to send data signals to an emulation microcontroller, as claimed.

Furthermore, as it relates to all claims in the present application, Applicants respectfully assert that the suggestion or motivation to combine the Bhandari and Szeto references has not been shown sufficiently to establish a prima facie case of obviousness, as discussed in MPEP §2143. Applicants respectfully assert that neither Bhandari nor Szeto, either explicitly or inherently, provide a motivation or suggestion to combine the two references. Moreover, Szeto explicitly teaches away from the combination by

pointing out the disadvantages of in-circuit emulation, as taught in Bhandari, and teaching the use of actual production systems instead of Bhandari's emulation system. Thus, not only do the references themselves fail to provide a motivation or suggestion to combine, but they explicitly teach away from the combination.

Applicants respectfully assert that Bhandari and Szeto, either alone or in combination, fail to suggest, teach, or describe the limitations "sending a control signal to the pod to place the emulation device into a sleeping state" and "programming a programmable device residing in the socket while the emulation device is in the sleeping state" as recited in independent Claim 13. As discussed above, neither of the cited references contemplates the combination of an emulator and a programmer, either when viewed alone or together. Consequently, neither of the references teaches activation of a sleeping state to enable programming or deactivation of a sleeping state to enable emulation. Additionally, Applicants respectfully assert that placing an emulation device in a sleeping state via a control signal to enable programming of a coupled device, as claimed, would not have been obvious to one skilled in the art at the time of Applicants' invention.

For these reasons, Applicants respectfully assert that independent Claims 1, 7, and 13 are not rendered obvious by Bhandari in view of Szeto.

Since Claims 3-6 depend from independent Claim 1, Claims 8-10 and 12 depend from independent Claim 7, and Claims 14-20 depend from independent Claim 13, the dependent claims are also not rendered obvious by the combination of Bhandari and Szeto. Thus, Claims 1, 3-10 and 12-21 overcome the 35 U.S.C. §103(a) rejections of record, leaving these claims in a state of allowance.

CONCLUSION

Applicants respectfully assert that Claims 1, 3-10 and 12-20 are in condition for allowance and Applicants earnestly solicit such action from the Examiner.

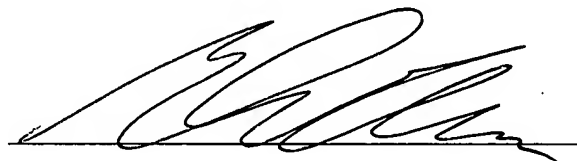
The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,

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